



Australian Medicinal Cannabis Pricing Analysis

Q3 2018

- »» Entry level product prices fall by close to 50% over 12 months
- »» Number of legal products available up threefold
- »» Pharmacy markup, dosage requirements create huge variance in monthly cost to patients
- »» Costs are around 25% higher than illegal products, but the gap is expected to shrink

Summary

The Cannabis Access Clinics Research Centre has undertaken the first structured review of legal medicinal cannabis product prices in the Australian market.

Our analysis has revealed that over the past 12 months, there has been a significant increase in the number, and variety of legal products on offer to Australian patients. Product prices have also fallen substantially as pricing competition has intensified.

Cost to patients remains highly variable, and are influenced not just by product type prescribed, but also by pharmacy margin, which fluctuates significantly, and by the dosage required to see benefits.

Despite this, prices paid by many patients fall within the limits of what is considered affordable. We expect product prices to continue to trend downwards, as more players enter the market and more streamlined, efficient supply chains are established.

Product Availability

A threefold increase over past 12 months

Since the Therapeutic Goods Administration (TGA) relaxed regulations on the import of medicinal cannabis products in February 2017, the country has seen an influx of products available for patients. The Office of Drug Control (Australia's regulatory authority for medicinal cannabis import and production) lists companies that have been given approval to cultivate and import a product, and as of Q3 2018, there are 8 local manufacturers and 17 importers approved.

Our analysis shows that products¹ available for doctor prescription have increased more than threefold over the period analysed from 11 products to 35. The number of suppliers confirmed to have products available has also increased over the period, almost four-fold from 3 to 11. Currently, products in market are primarily sourced from Canada with some supply also coming from Europe. A small number of products are manufactured locally in Australia, using ingredients from plants grown overseas. Currently we are not aware of any legal products in the Australian market that use plants cultivated in Australia, but we expect these products to come online in 2019.

Product Range

More choices for doctor prescription available, but room for growth

At the start of the period, the only 2 product types available for doctors to prescribe were an oral spray, which delivers cannabinoids via the oromucosal route, and oil-based products that are ingested.

Today, oil-based products are the most common delivery mechanism in the market, with over 21 individual oil-based products available. Doctors now have, however, a number of additional prescription options. These include capsules which can be more easily dosed than oils, and dried leaf products (in raw form, and milled to a fine powder) which can be inhaled or vaporized to offer advantages of rapid onset of effect. We note that some of the delivery mechanisms available in other markets such as topical creams and sublingual strips are not yet available in Australia but are expected to enter the market soon.

Product prices have almost halved in the past year

The larger number of players in the market has led to pricing pressure, particularly in cannabis oil products. On average, price² per milligram for oil-based cannabinoids³ has dropped 11% over the past 12 months, to \$0.30 per mg. More importantly from a customer perspective, the floor price (the lowest priced product in the market) for cannabis oils has fallen drastically by 47.6% to \$0.10 per mg for a CBD only product, suggesting that increased competition and volume are driving prices down.

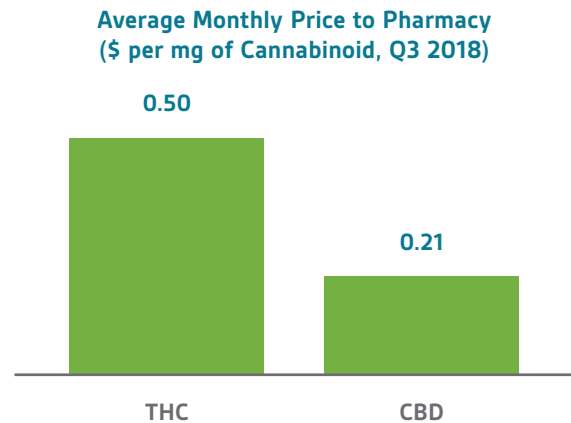
¹ Only companies that could demonstrate they have products available for prescription by our doctors were included in our analysis. Cannabis Access Clinics does not publish brand names on the basis that medicinal cannabis products available for prescription in Australia are not registered medicines and cannot be promoted.

² Price analyzed is sale price to pharmacy.

³ Average of all oil-based products (CBD only, THC only and Blend).

CBD is much cheaper than THC

It is important to note that product price does differ substantially by the type of cannabinoid. THC (a psychoactive molecule in the plant, currently scheduled as an S8 controlled drug in Australia) only products are significantly more expensive, coming in at \$0.50 per mg on average in Q3 2018. CBD (non-psychoactive, S4 prescription medicine in Australia) based oils cost less than half, at \$0.21 per mg on average, presumably reflecting lower cost to produce the less restricted CBD-based products.



Pharmacy markup can be up to 140%

In Australia, medical cannabis products are dispensed via pharmacy⁴ and are generally marked-up for sale to the patient. In most cases the amount of the markup is decided by the pharmacy. As with many early stage markets, the amount of markup varies widely. On average, pharmacists marked up medicinal cannabis products by 26%, which would be expected for a product of this nature. However some pharmacists increased price by up to 140%. Common reason for high markup include the additional handling costs of a Schedule 8 medicine and the additional tracking paperwork required with prescription of unregistered cannabis medicines.

Cost to Patient varies widely by condition being treated

There has been a lot of commentary in the public domain around costs of legal medicinal cannabis.

To correctly understand the costs of legal medicinal cannabis it is important to describe the way it is manufactured, prescribed and dosed.

Legal medicinal cannabis products are manufactured with very specific dosages of the active ingredient (usually THC or CBD). For example, a product may contain 10 mg of cannabinoids per mL, in a 50mL bottle of oil, summing to 500mg of active ingredient per bottle. The costs of the product are typically tied to the amount of this active ingredient it contains.

A doctor's prescription is often based on the patient starting on a low dose and increasing dose until an optimal outcome is achieved. The effective dosage a patient achieves can vary significantly by patient, but also varies significantly by the condition being treated. It is important to note that not all patients see benefit from medicinal cannabis treatments.

Cannabis Access Clinics has analyzed patient costs, based on the actual monthly dosage patients took, across three treatment areas:

Chronic Pain - the most common condition for patients receiving medicinal cannabis prescriptions. Our analysis showed that patients paid \$353 per month on average for legal medicinal cannabis in Q3 2018.

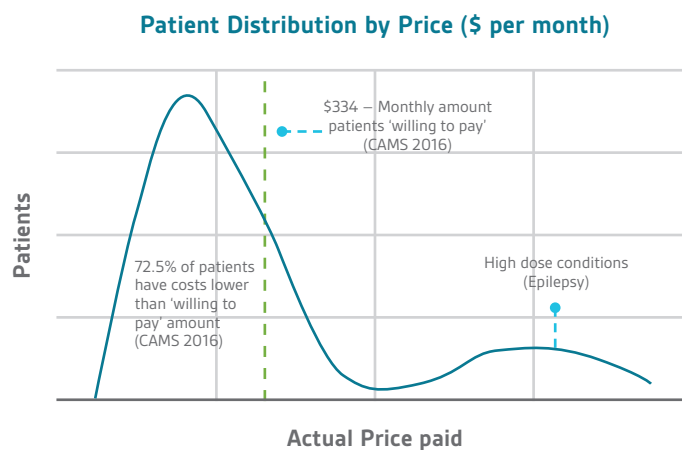
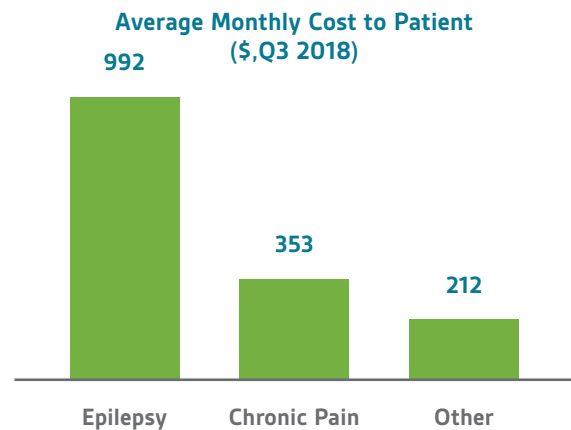
Epilepsy - Often cited as an example of the high costs of medicinal cannabis, patients with epilepsy require much higher dosage prescriptions in order to see benefits. In the period analyzed patients spent an average of \$992 per month on treatment.

Other indications: A range of other indications we analyzed including insomnia, fibromyalgia, anxiety, and multiple sclerosis. The average product costs for these patients as a group was \$212 per month.

⁴ Cannabis Access Clinics does not dispense products.

Medicinal cannabis in Australia is not covered by the Pharmaceutical Benefits Scheme (PBS) and costs are paid by patients out of pocket. It is interesting to note that, while legal products are more expensive than illegal product, the gap is not as large as public commentary may suggest.

According to the CAMS⁵ study, a survey of patient usage done in 2016, the average spend by patients on illegal medicinal cannabis was reported at \$297 per month (\$68.6 per week). Our patient data shows that average spend on legal products is currently around 25% higher, at \$372 per month (\$85.84 per week), averaged across all patient types.



Perhaps more interestingly, the CAMS study noted that patients are willing to spend, on average, \$334 per month (\$77 per week) on medicinal cannabis. For the period of time studied, 72.5% of Cannabis Access Clinics patients were spending less than this amount, suggesting that for many patients the costs of legal medicinal cannabis prescriptions may be considered affordable.

Despite this observation, the pricing of medicinal cannabis products is still a contentious issue. As long as medicinal cannabis products are not covered by the PBS, it will appear expensive when compared to medicines that are heavily subsidized by the government. Many patients suffering from chronic, complex conditions are accustomed to paying \$39.50 (or at concession rates, as low as \$6.40) per PBS prescription, and will struggle to justify out of pocket costs for medicinal cannabis in the hundreds of dollars per month.

We also note the unique challenge for patients who require high dosages. The most commonly example being patients with epilepsy who may only see a positive response to treatment with high doses of CBD, leading to costs in the thousands of dollars per month.

For all patients, however, the outlook for pricing is positive. In 2019, it is expected that many more suppliers will enter the Australian market from established production hubs like Canada and Europe. Australian cultivators and manufacturers are also expected to come online in 2019, further adding to pricing competition, and inevitably lower prices.

⁵ Medicinal-cannabis-australia-2016-cannabis-medicine-survey-cams reported average weekly usage. Nicholas Lintzeris, Jessica Driels, Natalie Elias, Jonathon C Arnold, Iain S McGregor and David J Allsope.

Methodology

The Cannabis Access Clinics Research Centre analysed product pricing over the 12 month period Q3 2017 to Q3 2018.

Pricing data was collected from suppliers who have been granted authority from the Office of Drug Control, to supply medicinal cannabis into the Australian market. Only suppliers who could demonstrate they had product available in the market at the time of the analysis were included in the study. One supplier that neglected to provide pricing data was omitted from the study, however it is believed that this supplier has limited market share.

Product price was based on list price to pharmacy, including shipping, for 1 unit (vial, packet etc) of product. Some suppliers offer discounts for larger volume orders, but these discounts has not been reflected in the analysis.

Analysis of pharmacy and patient data was based on a random panel of data points selected from the Cannabis Access Clinics patient database over the period August and Sept 2018.

About Cannabis Access Clinics

Cannabis Access Clinics is the first network of healthcare clinics focussed on helping doctors and patients navigate the regulatory pathway for prescribing medicinal cannabis products in Australia and New Zealand.

Our clinics work closely with doctors, and their patients who suffer from indications for which there is some evidence that medicinal cannabis therapies may be beneficial. We work in accordance with TGA Guidance documents on medicinal cannabis, consulting patients with indications including chronic pain (including cancer pain), chemotherapy-induced nausea and vomiting in cancer (CINV), multiple sclerosis, PTSD, anxiety, insomnia, epilepsy, HIV aids and others.

This research was completed by the Cannabis Access Clinics Research Centre, a group that includes academics and practitioners conducting observational studies and analysis in the field of Medicinal Cannabis, in Australia and New Zealand.

For more information about our clinic or our research call **1300 991 477** or email **info@caclinics.com.au**



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